AMERICAN INTERCONTINENTAL UNIVERSITY™

EXPERIENCED PROFESSIONAL CERTIFICATE IN Forensic Science

Certificate Description

This certificate provides professionals the opportunity to enhance specialized skills in Forensic Science.

Courses, Descriptions and Objectives

Arson Investigation—CRJS 350—This course will explore criminal and scientific investigation techniques associated with arson. Various arson causation theories and principles of incendiary fire analysis and detection along with social, psychological and environmental factors associated with arson will be explored. This course will assist students in identifying the origin and cause of suspicious fires.

Outcomes:

- Demonstrate technical knowledge of methods used to conduct arson investigation
- Explain the ignition and burning process of different fuels
- Apply various scientific investigative techniques in arson investigation
- Analyze the legal foundation for conducting an incendiary fire investigation
- Identify and analyze the social, economic and psychological motives behind incendiary fires

Evidence—CRJS 355—This course examines the various types of evidence admissible by law, including real, demonstrative and documentary evidence. This course addresses the roles lay witnesses and expert evidence play in the legal setting as well as during a criminal trial.

Outcomes:

- Explain and identify the difference between real, demonstrative, and circumstantial evidence
- Explain the concepts of impeachment, hearsay, privileges, and burdens of proof
- Analyze the Federal Rules of Evidence
- Analyze the Exclusionary Rule and its application to illegally seized evidence

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Criminalistics—CRJS 365—This course introduces the non-scientific student to the field of forensic science through an exploration of its applications to criminal investigations, and clear explanations of the techniques, abilities, and limitations of the modern crime laboratory. The course combines classroom lecture/discussion with practical laboratory exercises related to field forensics. Topics include the recognition, identification, collection/ preservation, individualization, and evaluation of physical evidence such as hairs, fibers, chemicals, blood, semen, glass, soil, fingerprints, documents, firearms, impression evidence, and serial number restoration. Students will document a crime scene by means of photography, notes, and scene sketching.

Outcomes:

- To understand the roles and responsibilities of forensic scientists in the criminal justice and legal systems of the United States
- To understand the scope, scientific foundation, and techniques of a variety of the scientific disciplines practiced in crime laboratories
- Explain the importance of expert testimony and report writing
- Apply various analytical techniques used to examine physical evidence

Aspects of Forensic Psychology—CRJS 375—This course examines the aspects of human behavior directly related to the legal process and the professional practice of psychology in the context of forensic science. The course explores many aspects of the practice of forensic psychology including assessment, treatment, and consultation within the legal system that encompasses both criminal and civil law. The student will learn the many ways psychology can assist and influence the legal system. Finally, students will be introduced to various career opportunities in forensic psychology and will be exposed to a variety of professionals who work in the area of forensic science.

Outcomes:

- Describe the roles and functions of police personnel, including investigation
- Discuss issues related to police discretion
- Evaluate law enforcement decisions using appropriate ethical and legal guidelines
- Identify and analyze characteristics of police subcultures and their effect on law enforcement
- Assess methods of planning contemporary homeland defense and security strategies
- Evaluate the effect of technology and law enforcement

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Criminalistics II—CRJS 406—Criminalistics II is part II of a two part series. This course introduces the non-scientific student to the field of forensic science through an exploration of its applications to criminal investigations, and clear explanations of the techniques, abilities, and limitations of the modern crime laboratory. The course combines classroom lecture/discussion with practical laboratory exercises related to the field of forensics. Topics include the recognition, identification, collection/preservation, individualization, and evaluation of physical evidence such as hairs, fibers, chemicals, blood, semen, glass, soil, fingerprints, documents, firearms, impression evidence, and serial number restoration. Students will document a crime scene by means of photography, notes, and scene sketching.

Outcomes:

- Identify and describe the responsibilities associated with preservation of the crime scene
- Describe the various steps associated with the identification, collection, and preservation of evidence
- Apply various techniques to develop and preserve fingerprints
- Identifying the class and individual characteristics of physical evidence
- Apply various techniques using the casting method for preservation of evidence
- Apply course content to process a simulated crime scene

Medicolegal Death Investigations—CRJS 471—This course introduces the student to the field of medicolegal death investigation in the context of forensic science. In this course, students will learn jurisdiction established by the law to define the cause and manner of death, conduct a death scene investigation and techniques in establishing identity and post mortem interval. Students will obtain skills in notification of next of kin, interviewing witnesses, and interpreting crime scene photography.

Outcomes:

- Define cause and manner of death and legal requirements based on receipt of a death certification
- Conduct and document a simulated death scene investigation
- Define forensic science, postmortem interval, body changes, relevant medical history, traumatic injury, postmortem lab tests, and features of an equivocal death scene investigation
- Apply techniques in establishing identity and notification procedures
- Compose a comprehensive death report from a simulated crime scene investigation

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Introduction to Biometrics—CRJS 472—This course provides students with an overview of the research and techniques used in the field of biometrics. Students will be exposed to various recognition patterns and techniques such as voice, facial expression, retina identification, fingerprint and other unique traits and identifying markers. Several important issues on the ethics and viability of biometrics in forensic science will be considered in this course.

Outcomes:

- Demonstrate knowledge of basic biometrics concepts
- To understand, compare and contrast the legal considerations of the Fourth Amendment and rights to privacy in public and private settings
- To develop an understanding of the role of expert witnesses and preparation for trial testimony
- Explain challenges and benefits of biometrics in criminal investigations
- Apply various recognition techniques and database functions

Cybercrimes—CRJS 475—This hands-on introductory course provides students with the knowledge and skills necessary to begin a computer based investigation. The course begins with an overview of computer forensics and then proceeds to introduce forensics tools, concepts, and documentation of evidence/procedures. The course uses common and accepted incident Response Policies and Procedures for previewing and securing digital evidence. Topics include: the basics of computer evidence and basic forensic methodology.

Outcomes:

- Explain the impact of the Internet and computer-related crimes to law enforcement
- Identify and explain challenges in maintaining and supporting law enforcement investigations in computer-related cases
- Analyze statutory and case law relating to the investigation and prosecution of computer crimes
- Analyze the legal implications of the First and Fourth Amendments as they relate to computer-related investigations

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Forensic Biology—CRJS 478—This introductory course exposes students to the areas of cellular biology, forensic serology, genetics, and human physiology as well as their applications within forensic science. Through lectures, readings, discussions and general exercises emphasizing the fundamentals of basic science within Forensic Biology, students will learn the principles of biological and biochemical processing in relationship to forensics. The course will afford students the opportunity to enhance their critical thinking and problem solving skills within the field of forensic science. This course includes a discussion of the various areas of forensic science where a biologist can specialize.

Outcomes:

- Examine the three general stages of developmental history of modern forensic biology and learn to identify biological fluids including blood, semen, and saliva
- Identify and describe the major bones in the body and the process of bone formation and muscles on the skull and how these bones and muscles can be used to aid in the process of facial reconstruction
- Students will understand the structure and function of DNA, the process of DNA replication, the methods used to process and analyze DNA, and explain why one method is preferred over the others in the field of forensics
- Discuss and analyze the individualization of biological evidence using DNA profiling analysis and interpretation of results
- Apply critical thinking and problem solving skills in identifying how and when to apply forensic biology in criminal investigation